

IN THE CLAIMS

The following is a listing of all pending claims (none of which are amended herein):

1. (CANCELLED)
2. (Previously Presented) An image display device as set forth in Claim 28, wherein the chrominance signal converter converts the chrominance signal into a chrominance signal of a color suitable for an output of the sensor.
3. (Currently Amended) An image display device comprising:
an image display section for displaying an image in accordance with an input of a chrominance signal; and
a chrominance signal converter for converting the chrominance signal to be inputted into the image display section, in accordance with light characteristics of external light incident upon the image display section, the chrominance signal converter including a target display color setting section which uses information regarding the light characteristics of the external light to generate a target display color chrominance signal indicative of a color to display on the image display section for providing an image which agrees with human chromatic adaptation characteristics by referring to tristimulus values of light to which a human vision system adapts as the external light changes; and
wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

YOSHIDA et al.
Serial No. 09/849,272

4. (Previously Presented) The image display device as set forth in Claim 3, wherein:

the chrominance signal converter includes a color reproduction section for reproducing the color to display by using three primary colors having chromaticities suitable for the external light, the chrominance signal converter converting the chrominance signal into a chrominance signal of a color reproduced by the color reproduction section.

5. (Currently Amended) An image display device, comprising:
a sensor for sensing light characteristics of external light;
an image display section for displaying an image in accordance with an input of a chrominance signal;

a chrominance signal converter for converting the chrominance signal to be inputted into the image display section, in accordance with the light characteristics of the external light that strikes onto the image display section, wherein the chrominance signal converter converts the chrominance signal into a chrominance signal of a color suitable for an output of the sensor; and

wherein the chrominance signal converter includes (1) a target display color setting section for setting a color to display as an image agreeable with chromatic adaptation characteristics of a human by referring to tristimulus values of light to which a human vision system adapts as the external light changes, according to the output of the sensor, and (2) a color reproduction section for reproducing a target display color that has been set by the target display color setting section, by using three primary colors having chromaticities suitable for the output of the sensor, the chrominance signal converter converting the chrominance signal into a chrominance signal of a target display color reproduced by the color reproduction section; and

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three

YOSHIDA et al.
Serial No. 09/849,272

primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

6. (Currently Amended) An image display device, comprising:
- an image display section for displaying an image in accordance with an input of a chrominance signal; and
- a chrominance signal converter for converting the chrominance signal to be inputted into the image display section in accordance with light characteristics of external light incident upon the image display section, the chrominance signal converter including
- (1) a color correction coefficient generator for generating a color correction coefficient in accordance with the light characteristics of the external light, and
 - (2) a color correction section for correcting the chrominance signal by using the color correction coefficient generated by the color correction coefficient generator, wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

7. (Previously Presented) The image display device as set forth in Claim 6, wherein:

the color correction coefficient generator includes (1) a target display color setting coefficient generator for generating a target display color setting coefficient as a first color correction coefficient used for setting a target display color, and (2) a color reproduction coefficient generator for generating a color reproduction coefficient as a second color correction coefficient used for color reproduction, based on the information regarding the light characteristics of the external light, and

YOSHIDA et al.
Serial No. 09/849,272

the color correction section includes (1) a multiplier for calculating a product of (a) the target display color setting coefficient generated by the target display color setting coefficient generator, and (b) the color reproduction coefficient generated by the color reproduction coefficient generator, and (2) a target display color correction section for performing color correction of a chrominance signal, based on a value obtained by the multiplier.

8. (Previously Presented) The image display device as set forth in Claim 30, wherein:

the sensor has a function to resolve wavelength characteristics into at least two different types of wavelength regions, and measures wavelength characteristics of the external light, based on output values in the respective wavelength regions.

9. (Currently Amended) An image display device comprising:

an image display section for displaying an image in accordance with an input of a chrominance signal;

a chrominance signal converter for converting the chrominance signal to be inputted into the image display section, in accordance with light characteristics of external light that strikes onto the image display section;

a memory for storing the light characteristics of a plurality of types of the external light; and

wherein the chrominance signal converter converts the chrominance signal into a chrominance signal of a color suitable for the light characteristics of the external light that are selected and read out from the memory; and

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the

YOSHIDA et al.
Serial No. 09/849,272

chrominance signal so that image display is carried out based on the chromaticity coordinates.

10. (Original) The image display device as set forth in Claim 9, wherein:
the memory stores wavelength characteristics of more than two types of wavelength regions of the external light, and outputs the wavelength characteristics as the selected light characteristics of the external light, in accordance with a combination of the stored wavelength characteristics.

11. (Previously Presented) The image display device as set forth in Claim 9,
wherein:

the chrominance signal converter includes a target display color setting section for setting the color to display based on the light characteristics of the external light selected from the memory, the chrominance signal converter converting the chrominance signal into a chrominance signal of a target display color that has been set by the target display color setting section.

12. (Previously Presented) The image display device as set forth in Claim 9,
wherein:

the chrominance signal converter includes a color reproduction section for reproducing the color to display by using three primary colors having chromaticities suitable for the light characteristics of the external light selected from the memory, the chrominance signal converter converting the chrominance signal into a chrominance signal of a color reproduced by the color reproduction section.

YOSHIDA et al.
Serial No. 09/849,272

13. (Previously Presented) The image display device as set forth in Claim 9, wherein:

the chrominance signal converter includes (1) a target display color setting section for setting the color to display based on the light characteristics of the external light selected from the memory, and (2) a color reproduction section for reproducing a target display color that has been set by the target display color setting section, by using three primary colors having chromaticities suitable for the output of the memory, the chrominance signal converter converting the chrominance signal into a chrominance signal of the target display color reproduced by the color reproduction section.

14. (Original) An image display device as set forth in Claim 9, further comprising: a sensor for sensing the light characteristics of the external light,

wherein the chrominance signal converter selectively performs (1) conversion of a chrominance signal based on an output of the sensor, or (2) conversion of a chrominance signal based on the light characteristics of the external light selected from the memory.

15. (Original) The image display device as set forth in Claim 14, wherein:

the chrominance signal converter performs the conversion of the chrominance signal based on the light characteristics of the external light selected from the memory, when an illuminance output, which is one of types of the outputs of the sensor, exceeds a certain value.

YOSHIDA et al.

Serial No. 09/849,272

16. (Original) The image display device as set forth in Claim 9, wherein:
the memory stores in advance a plurality of types of characteristics of the external light and a plurality of color correction coefficients that vary depending on the light characteristics of the external light; and
the chrominance signal converter includes (1) a color correction coefficient generator for reading out a color correction coefficient stored in the memory, based on the selected light characteristics of the external light, and (2) a color correction section for correcting the chrominance signal by using the color correction coefficient that is read out from the memory by the color correction coefficient generator.

17. (Currently Amended) An electronic apparatus, which has an image display device, comprising:

an image display section for displaying an image in accordance with an input of a chrominance signal; and

a chrominance signal converter for converting the chrominance signal to be inputted into the image display section, in accordance with light characteristics of external light incident upon the image display section, the chrominance signal converter including a target display color setting section which uses information regarding the light characteristics of the external light to generate a target display color chrominance signal indicative of a color to display on the image display section for providing an image which agrees with human chromatic adaptation characteristics by referring to tristimulus values of light to which a human vision system adapts as the external light changes, and

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

YOSHIDA et al.
Serial No. 09/849,272

18. (CANCELLED)

19. (CANCELLED).

20. (Currently Amended) An image display method comprising converting a chrominance signal to be inputted into an image display section, in accordance with light characteristics of external light that strikes onto the image display section that displays an image in accordance with an input of a chrominance signal, wherein the chrominance signal is converted into a chrominance signal of a color suitable for the light characteristics of the external light that are selected and read out from among light characteristics of a plurality of types of external light, which are stored in a memory in advance; and

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

21. (CANCELLED)

22. (CANCELLED)

23. (CANCELLED)

24. (Previously Presented) The image display method as set forth in Claim 20, wherein the conversion of the chrominance signal is carried out based on a color to display, which is set according to the light characteristics of the external light and in consideration of color adaptation characteristics of a human.

YOSHIDA et al.
Serial No. 09/849,272

25. (Original) The image display method as set forth in Claim 20, wherein the conversion of the chrominance signal is carried out based on a color reproduced by using three primary colors having chromaticities suitable for the light characteristics of the external light.

26. (Currently Amended) The image display method as set forth in Claim 20, wherein a color is set, according to the light characteristics of the external light, as an image which agrees with human chromatic adaptation characteristics, the color is reproduced by using three primary colors having chromaticities suitable for the light characteristics of the external light, and the conversion of the chrominance signal is carried out based on the reproduced color.

27. (Previously Presented) The image display device of claim 3, further comprising means for supplying the information regarding the light characteristics.

28. (Previously Presented) The image display device of claim 27, wherein the means for supplying the information regarding the light characteristics comprises a sensor.

29. (Previously Presented) The image display device of claim 6, further comprising means for supplying the information regarding the light characteristics.

30. (Previously Presented) The image display device of claim 29, wherein the means for supplying the information regarding the light characteristics comprises a sensor.

YOSHIDA et al.
Serial No. 09/849,272

31. (Previously Presented) The image display device of claim 29, wherein the means for supplying the information regarding the light characteristics comprises a memory for storing in advance the light characteristics of a plurality of types of the external light, and

wherein the chrominance signal converter converts the chrominance signal into a chrominance signal of a color suitable for the light characteristics of the external light that are selected and read out from the memory.

32. (Previously Presented) The image display device as set forth in Claim 31, wherein:

the memory stores wavelength characteristics of more than two types of wavelength regions of the external light, and outputs the wavelength characteristics as the selected light characteristics of the external light, in accordance with a combination of the stored wavelength characteristics.

33. (Previously Presented) The image display device as set forth in Claim 31, wherein:

the chrominance signal converter includes a target display color setting section which uses information regarding the light characteristics of the external light to generate a target display color chrominance signal indicative of a color to display on the image display section for providing an image which agrees with human chromatic adaptation characteristics.

YOSHIDA et al.
Serial No. 09/849,272

34. (Previously Presented) The image display device as set forth in Claim 33, wherein:

the chrominance signal converter includes a color reproduction section for reproducing the color to display by using three primary colors having chromaticities suitable for the light characteristics of the external light selected from the memory, the chrominance signal converter converting the chrominance signal into a chrominance signal of a color reproduced by the color reproduction section.

35. (Currently Amended) An electronic apparatus, which has an image display device, comprising:

an image display section for displaying an image in accordance with an input of a chrominance signal; and

a chrominance signal converter for converting the chrominance signal to be inputted into the image display section, the chrominance signal converter including

(1) a color correction coefficient generator for generating a color correction coefficient in accordance with the information regarding the light characteristics of the external light, and

(2) a color correction section for correcting the chrominance signal by using the color correction coefficient generated by the color correction coefficient generator.

36. (Currently Amended) A method of operating an image display device comprising:

obtaining information regarding light characteristics of external light incident upon a screen of the image display device;

using an input chrominance signal and the information regarding the light characteristics of external light to generate a target display color chrominance signal indicative of a color to display for providing an image which agrees with a human

YOSHIDA et al.
Serial No. 09/849,272

chromatic adaptation characteristics by referring to tristimulus values of light to which a human vision system adapts as the external light changes; and

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

37. (Previously Presented) The method of claim 36, further comprising obtaining the information regarding the light characteristics of external light from a sensor.

38. (Previously Presented) The method of claim 36, further comprising:
obtaining the information regarding the light characteristics of external light from a memory in which are stored the light characteristics of a plurality of types of external light;

converting the chrominance signal into a chrominance signal of a color suitable for the light characteristics of the external light that are selected and read out from the memory.

39. (Currently Amended) A method of operating an image display device comprising:

obtaining information regarding light characteristics of external light incident upon a screen of the image display device;

using a color correction coefficient generator to generate a color correction coefficient with respect to the external light incident upon the screen;

correcting an input chrominance signal using the color correction coefficient; and applying the corrected input chrominance signal to an image display section; and

YOSHIDA et al.

Serial No. 09/849,272

wherein, from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, chromaticity coordinates values of the three primary colors are determined for external light, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

40. (Previously Presented) The method of claim 39, further comprising obtaining the information regarding the light characteristics of external light from a sensor.

41. (Previously Presented) The method of claim 39, further comprising:
obtaining the information regarding the light characteristics of external light from a memory in which are stored the light characteristics of a plurality of types of external light;

converting the chrominance signal into a chrominance signal of a color suitable for the light characteristics of the external light that are selected and read out from the memory.